

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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Assignee: Cisco Technology, Inc.  
Title: METHOD AND APPARATUS FOR INTER-ZONE RESTORATION  
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Examiner: Nghi V. Tran Group Art Unit: 2151  
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Austin, Texas  
September 24, 2007

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**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Dear Sir:

Applicant hereby requests review of the Final Office Action mailed April 9, 2007 (the "Final Office Action") and of the Advisory Action mailed July 23, 2007 (the "Advisory Action") in the above-identified application. Applicant notes that the Advisory Action sets a period for reply that expired on the mailing date of the Advisory Action. This Request is being filed concurrently with a Notice of Appeal, an Amendment, and a petition for a two-month extension of time that extends the period for reply to September 24, 2007 (since September 23, 2007 was a Sunday). Claims 1-46 are pending in the application. Claims 1-46 stand rejected.

***Rejections Under 35 U.S.C. § 103(a)***

Claims 1-46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,026,077 issued to Iwata ("*Iwata*") in view of U.S. Patent No. 5,832,197 issued to Houji ("*Houji*"), and further in view of U.S. Patent No. 6,708,209 issued to Ebata et al. ("*Ebata*"). Applicants respectfully submit that the cited portions of *Iwata*, *Houji*, and *Ebata*, taken alone or in any permissible combination, fail to disclose the claimed invention.

A number of limitations of claim 1 are not present in the cited portions of the references. As a first example, claim 1 includes establishing an **inter-zone link** between a first border node

of a source zone and a second border node of a destination zone. In conjunction, the inter-zone link meets **class of service requirements** between the source zone and the destination zone. The Final Office Action argues on pp. 4 and 7 that these limitations are disclosed in *Ebata*. Applicant respectfully disagrees.

The Final Office Action and Advisory Action cite three passages of *Ebata* (7:1-63, 17:37-58, and 18:17-21) as disclosing these limitations. In particular, the Final Office Action and the Advisory Action equate *Ebata*'s "inter-organization link" and "QoS control" with the inter-zone link and class of service requirements in Applicant's claim 1.

*Ebata*'s quality of service (QoS) control does not provide links that meet any requirements. As can be seen from the cited passages and related discussion, *Ebata*'s QoS control allocates bandwidth to each path on a network, on an end-to-end basis according to the kind of traffic. A policy server makes a quality control setting on each network equipment according to a described policy. (*Ebata* at 1:16-26.) This policy for *Ebata*'s QoS control is described in table 321a. This table 321a has entries for outgoing interfaces of the routers that support inter-organization communication. (*Id.* at 6:61-66, FIG. 8.) Two of the columns in this table, "c-1" and "c-2," describe "upper limits" of bands that can be used by hosts or border routers (which, as noted below, differ markedly from Applicant's class of service requirements). (*Id.* at 7:7-11.)

This portion of *Ebata*, cited in the Final Office Action, includes an example of a band upper limit for an allocation. (*Id.* at 7:17-63.) This example makes clear that the band upper limit in *Ebata* is **not** used to meet class of service requirements. Rather, the band upper limit is a maximum capacity that can be carried on a link. In other words, ***Ebata*'s band upper limit is an available capacity. This parameter contrasts with Applicant's class of service requirements, since the *Ebata*'s available capacity is not the same as a *required* or *desired* capacity.**

This cited portion of *Ebata* (7:1-63) thus describes considerations that can be used in selecting among several possible paths for communication. The considerations may take into account the maximum available capacity or "band upper limit" of the individual links used in the paths. However, this example merely selects the best option among various available options; it does not seek an option that meets a required criterion. Indeed, this cited teaching of *Ebata* fails to discuss any requirements for the performance of the selected path, and does not attempt to

satisfy any required criteria—it merely selects the best path from among whatever paths are available. Thus, as previously stated, this cited portion of *Ebata* does not establish a link that “meets class of service requirements.”

In addition, this portion of *Ebata* does not disclose the establishing of a link that meets “class of service requirements between the source zone and the destination zone.” This additional shortcoming is evident because (1) the cited portion does not teach that any links between organizations (such as La2 or La3) are being selected at all—they are merely the only available options for communications in their respective situations, and because (2) the cited portion does not discuss any requirements that apply to the communication links between organizations. For these reasons as well, this cited portion of *Ebata* fails to establish an inter-zone link that meets class of service requirements between a source zone and a destination zone.

Still further, this portion of *Ebata* does not relate to decisions involved in establishing “an inter-zone link” that meets class of service requirements. The only decision that is made in this portion of *Ebata* (7:1-63) is the decision to select a first choice of links (LLa1, LLa2, LLa3, LLa4, and La3) over a second choice of links (LLa1, LLa2, LLa3, LLa8, LLa6, and La3). But this selection is based only on the differences within these two choices: the first choice uses intra-organization link LLa4 instead of two intra-organization links LLa8 and LLa6. Thus, this decision involves only *intra*-organization links, and does not involve any evaluation of the *inter*-organization links. For this reason as well, this cited portion of *Ebata* fails to establish an inter-zone link that meets class of service requirements between a source zone and a destination zone.

For these reasons, Applicant submits that it is amply clear that the first cited portion of *Ebata* (7:1-63) does not disclose the limitations of establishing an inter-zone link between a first border node of a source zone and a second border node of a destination zone, “where the inter-zone link meets class of service requirements between the source zone and the destination zone.”

The other cited passages do not remedy these shortcomings. The second portion of *Ebata* (17:37-58) cited with regard to these limitations states in part that “[f]or the communications covering multiple networks, the QoS control can be carried out not to violate the policy of each policy server of the networks through which the communications travel.” The meaning of this passage can be understood by examining what the “policies” are in *Ebata*. According to the Abstract of *Ebata*, the policy for a network defines “a quality that can be guaranteed” in the network. (*Ebata* at Abstract, lines 5-7.) This aspect of *Ebata* emphasizes a point that was

previously made: *Ebata* is concerned not with an inter-zone quality of service that is *required* or desired, but rather with evaluating the capacity that is *available* or “can be guaranteed.” The third and final portion of *Ebata* (18:17-21) that is cited with regard to these limitations also falls short. This passage describes a unit that provides a path that has a “guaranteed quality.” This guaranteed quality is within a calculation of a “quality that can be guaranteed” for the path (*id.* at 18:11-15)—in other words, it is the quality that turns out to be *available* on the path, and is not based on meeting a *requirement*. As noted in the Final Office Action on p. 4, this limitation is also not disclosed in *Iwata*. Applicant also does not find this limitation in the cited portions of *Houji*, which do not discuss inter-zone links.

Other limitations of Applicant’s claims are also lacking in the cited portions of the references. As a second example of the limitations missing from the cited portions, independent claim 1 includes limitations of in which **the pre-planned alternative route also meets the class of service requirements between the source zone and the destination zone**. The Final Office Action proposes on pp. 3-4 that this limitation is present in the Abstract; FIGs. 1 and 2; and 2:46—4:38 of *Houji*. Applicant respectfully disagrees, for at least three independent reasons.

**First**, the cited portions of *Houji* do not discuss zones or inter-zone links between a source zone and a destination zone. **Second**, even if the cited portions of *Houji* were to describe class service requirements for a pre-planned alternative route (a point that Applicant does not concede), there is no teaching that any such purported requirements are *the same* as the class of service requirements that are met by the inter-zone link (for which the Final Office Action turned to the teachings of *Ebata*). **Third**, the cited portions of *Houji* fail to disclose the use of a pre-planned alternative route. FIG. 3A of *Houji* makes this last point clear. FIG. 3A shows a switching protection routine that begins at step 30 after a link failure. The system checks in step 31 to see if any reserved (but not pre-planned) spare paths are available for use. The next steps clearly indicate that the reserved paths are not reserved or pre-planned with a required QOS parameter. Rather, the reserved spare paths in *Houji* need to be examined during the switching routine—*after* the link failure occurs—to determine whether they can support a user-specified QOS value. Such an approach obviously does not, and cannot, use a “pre-planned alternative route” as recited in Applicant’s claim 1.

Since these limitations are not disclosed in the cited portions of the references, Applicant respectfully submits that independent claim 1 and all claims dependent therefrom are allowable

under § 103(a). At least for similar reasons, independent claims 9, 17, 25, and 33 and all claims dependent therefrom are also allowable under § 103(a).

Applicant's independent claim 41 also includes various limitations that are not disclosed in the cited art. For example, claim 41 includes limitations of identifying an **inter-zone** link failure and of identifying an **intra-zone** failure within at least one of said source zone and said destination zone. These limitations relate both to an *inter-zone* link failure and also to an *intra-zone* failure. The Final Office Action cites two separate passages as disclosing "identifying an intra-zone failure within at least one of said source zone and said destination zone." First, the Final Office Action proposes on p. 6 that the link state database 102 from FIGS. 2-6 of *Iwata* teaches the identification of an intra-zone failure. Applicant respectfully disagrees.

The link state database 102 in *Iwata* is not related to the identification of intra-zone failures. *Iwata* describes this database as being included in a node control unit. (*Iwata* at 5:5-19.) With regard to the function of this database, *Iwata* discloses that the database 102 operates in conjunction with a link state routing protocol unit 101. According to *Iwata*, during regular operation the link state database 102 stores link state parameters captured by the link state protocol. (*Iwata* at 5:23-55.) In other portions of *Iwata*, these parameters are then used during the computation of routes. **The link state parameters in the *Iwata* database 102 are therefore not based on an identification of an intra-zone failure.**

Applicant's independent claim 46 also includes various limitations that are not disclosed in the cited art. For example, claim 46 includes a limitation wherein **a source zone and a destination zone execute separate copies of a topology distribution algorithm**. The Final Office Action proposes on p. 9, without explanation, that this limitation is disclosed in *Iwata* at 1:19-32; 1:60—2:43; and 3:44—4:16. Applicant fails to see any features in the cited passages that teach or fairly suggest this limitation. At least for this reason, claim 46 is allowable under § 103(a).

Respectfully submitted,



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